

VIDEO	Audio
	<p>>>Male Narrator: In this episode of Georgia Outdoors we'll explore the near miraculous life cycle of the butterfly, a beautiful butterfly garden in Thomasville Georgia and we'll plant our own beginner's butterfly garden with a little help from Walter Reeves of GPTV's own Gardening in Georgia... coming up next.</p>
	<p>>>Narrator: Butterflies are a symbol of beauty, innocence and fragile life. Almost nothing inspires the outdoor-lover more than the delicate, charming butterfly. Creatures of sunlight and warm, calm weather, the butterfly most enjoys the same ideal conditions that bring us humans outside as well. Perhaps that is why butterflies, and butterfly-ing, are becoming ever more popular, and it's good thing too because the habitats that butterflies prefer are quickly being destroyed by development. Habitat preservation is the only solution to butterfly conservation.</p>
	<p>And if butterflies are what you're after, then there is almost no better place to find them than Gardens of Callaway near Pine Mountain, GA, home of the Cecil B. Day Butterfly Center, North America's largest glass enclosed tropical conservatory where over one thousand butterflies flutter freely through the air. Patricia Collins is the Director of Education here and she has promised to show us around.</p>
	<p>The conservators can't just go outside and trap a few butterflies and stick them in the conservatory... the butterflies must be raised, this will be an excellent opportunity to learn more about the lifecycle of the butterfly.</p>
	<p>Patricia has brought us to the butterfly reproduction facility housed in a much less glamorous building than the conservatory, a humble beginning for some of earth's most exquisite creatures.</p>

>>Collins: Michael, we're going to look at the entire life cycle of the Golden Helicon Butterfly and this host plant is a tropical passion vine. And the female butterfly lays eggs on this particular plant and not any other kind of plant. So let's look for an egg. Oh I see one right there.

>>Michael Skinner: Oh that's an egg right there?

>>Collins: Tiny, tiny little thing. I've got to get my reading glasses out to see that. It's really small.

>>Skinner: That is small.

>>Collins: Each type of butterfly lays a different type of egg, so you can sort of, if you really know butterflies, you can sort of tell which ones—but you can tell, if it's on a passion vine, it's a passion vine butterfly.

>>Skinner: Look at that. I'm going to guess if I turn that over there's somebody having lunch.

>>Collins: Right. That's the first stage or the first instar. Little tiny, tiny caterpillar eating away. Some people say caterpillars are stomachs with legs. (laughs)

>>Skinner: Well that's all they do for that stage of their life. That's for sure.

>>Collins: Right. They grow so fast that they just sort of pop out of their skin or they molt. I guess that's a technical term. Here's one here that has just molted and he's left his skin behind. They do that about four times. Look how—it's beautiful with their tiny little hairs on their body.

>>Skinner: So how big will these guys have to get before they turn into a—

>>Collins: They go through four stages. And then the last stage, the fourth stage, turns a slightly different color.

>>Skinner: Well is this one right here?

>>Collins: Oh right. You see how he's a little bit different color. He's darker, sort of purplish like, not as

white. He seems to be a lot more active. He's really looking for a place to pupate, to attach to a maybe wire, maybe a stem of even another plant. And then they form the chrysalis. That's the final stage before an adult butterfly.

>>Skinner: Now after this guy gets to the point where he's ready to change, do we have an example of that hanging on this bush anywhere?

>>Collins: A chrysalis, yes, right here we have one. See right here. Looks almost like a dead leaf or a bird dropping.

>>Skinner: It does look like that.

>>Collins: It's got two little shiny, look like silver spots, almost like ascots. But they stay in this stage maybe a couple of—Oh! That one, he doesn't like to be moved!

>>Skinner: Like a Mexican jumping bean.

>>Collins: Right. And they will attach lots of different places, then an adult butterfly will emerge.

>>Skinner: And how long does it take this to develop into an adult?

>>Collins: Usually a couple of weeks. And this is a chrysalis stage or the pupa stage, and a lot of people they think cocoons. But usually we say cocoon is for a moth and the chrysalis is for the butterfly. And I've actually got an Atlas moth here. The pupa is inside this and it's actually—they've used a leaf, spun some silk around and used a leaf, whereas the butterfly just molts out of its skin and the chrysalis is right there.

>>Skinner: That's really neat. I'm looking here in the cell and it's interesting because I see you've got what I'm going to guess is going to be the food for the adults in here.

>>Collins: Absolutely, nectar plants. And lantana is a wonderful nectar plant. There are lots of other ones that you can grow: butterfly bush, butterfly weed, pintos, Egyptian star clusters, some other things as it's

	<p>a good nectar producer and the butterflies can actually get into it, get their proboscis down into it. It's a drinking straw-like tongue, so as long as they can get that nectar. Lantana's just happen to be really easy.</p> <p>>>Skinner: Now with all the butterflies that are in that these get moved to the butterfly center, how long with they live in there?</p> <p>>>Collins: These particular ones live about 6 months or so, so that's pretty long for a butterfly. In their natural habitat they would live probably 3 to 6 months, whereas here we're hoping they live the whole 6 months or more.</p> <p>>>Skinner: So the adults have a pretty short lifecycle, so I see adults flying around in here. Are they going to reproduce in here?</p> <p>>>Collins: Yes, they have a courtship. They mate and then the female butterfly is looking for the host plant. And she actually has like claws and she scratches the leaves of these host plants. So this is the right plant, then she will lay eggs on the host plant. And so the whole process just keeps going.</p> <p>>>Skinner: So how many other species do you grow in these cells?</p> <p>>>Collins: We grow 22 different species here in the production facilities.</p> <p>>>Skinner: Wow, can we go see some other caterpillars or eggs or chrysalises or adults?</p> <p>>>Collins: Right. Yes. All of the above. (laughs)</p>
	<p>>>Narrator: The butterflies of Callaway are tropical butterflies-- they are not native to Georgia. If you want to see Georgia's butterflies, and there are over 160 species to see in our state, the gardens outside of the Day Butterfly Center are a great place to start. But we know of another really great place to view the vast numbers of native butterflies that Georgia has to offer, the butterfly garden of Mrs. Julie Neel of Thomasville, GA. Mrs. Neel's garden is private, but it is so well known in this part of Georgia that schools sometimes ask for</p>

	permission to visit, and that is just what happened on the day that we were there.
	>>Neel: And we'll have to take turns, but let's see if we can see a caterpillar down here.
	>>Narrator: And Mrs. Neel doesn't mind, in fact she enjoys it. She loves spreading the word about her butterflies and her garden.
	>>Neel: It was so nice having Brookwood School second grade out today. This morning it was a group of wonderful young people. They were very enthusiastic, which makes me feel good. It makes me try to work harder when I have groups like that that enjoy it so much
	>>Narrator: More often than school groups coming to Mrs. Neel's garden—Mrs. Neel goes to the schools. There she teaches the children about the lifecycle of the butterfly and why it's important to plant gardens for them.
	>>Neel: It's very important that people build butterfly gardens now because we're destroying so much of their natural habitat. And, when we destroy their habitat, we need to create whatever we destroy. We need to create it in another spot, and it's very important for the butterflies in particular. I do not use any pesticides or herbicides in my garden. And I've been doing this for years and everything seems to thrive fine.
	>>Narrator: Butterflies are important to the ecosystem, just and any animal, insect or bird is. As the Program Manager of the Georgia Department of Natural Resources' Non-Game and Endangered Species Program, Terry Johnson can explain more.
	>>Johnson: Butterflies, I think are some of the most overlooked of our wildlife species, they're very charismatic, and they're very colorful, and easy to see, but we don't really think about their importance to the whole scheme of things. One thing that I think we're learning more and more as time goes on is that they are great indicators of the health of the environment. They have very specific needs and if they're missing, they're not going to be there. And so I think the biologists are looking to them more and more as the thing we need to look at when we're looking at the overall health of an environment

	>>Neel: Now the best plant in my garden, you see the pink. That's called butterfly bush. And yesterday it had a big old tiger swallowtail on it, which is our state butterfly. And, are you all familiar with the tiger swallowtail butterfly?
	>> Narrator: Mrs. Neel was very instrumental in the decision to make the Tiger Swallowtail Butterfly the state butterfly. There were several criteria:
	>>Neel: It cannot affect any agriculture. It has to be a butterfly that occurs all over the state. And consequently, the tiger swallowtail just fit the bill perfectly. Not only did it use tree leaves as a host plant, but it's such a spectacular butterfly. When you see a tiger swallowtail it just lifts your spirits I think. And we're so lucky to have all our beautiful butterflies. Georgia has 160 identified butterflies. Some day there may be another one found, and that's why I like to encourage these young children to become butterfly watchers.
	>> Narrator: And apparently ... butterfly catchers too...
	>>Kid 1: Can we Ms. Neel? >>Ms. Neel: Yeah, you can catch one if you think you could. >>Kid 2: That'll be hard. >>Kid 3: I can catch one. >>Ms. Neel: You have to watch where you put your feet though. Don't step on the flowers. >>Kid 2: That's gonna be hard... >>Ms. Neel: (to camera) She wants to catch a butterfly so bad
	>> Narrator: And these children know what to do when they catch a butterfly...
	>>Kid: You want to hold it very gently so that it won't be harmed.
	>> Narrator: The children of the Brookwood School had a good time learning about the butterflies of Mrs. Neel's Garden, and they were very thankful!
	>>Female Narrator: The North American Butterfly Association's mission is to increase public enjoyment

	<p>and conservation of butterflies. NABA butterfly counts is an ongoing program of NABA to census the butterflies of North America and to publish the results. Volunteer participants select a count area with a 15-mile diameter and conduct a one-day census of all butterflies sighted within that circle. The counts are usually held around July 4th for the U.S. Write to this address or visit this website if you are interested in participating in a day of butterfly counting.</p> <p>>>Skinner: After that enthusiastic school group tour you gave this morning, you still up for giving us a tour? >>Neel: I'd love giving you a tour >>Skinner: You want to head this way...There are some plants in here that I don't recognize. >>Neel: This is Hibiscus coccinea, and it's just before having it's first blooms, and it is a wonderful nectaring plant for butterflies. >>Skinner: Is this a native? >>Neel: Yes. >>Skinner: Is it?</p>
	<p>>>Narrator: The butterfly season stretches from early spring to late fall—essentially the entire blooming season.</p>
	<p>>>Neel: Springtime is when my butterflies first arrive, when the native canessons [sic], honeysuckles start blooming, all the swallowtails start emerging. So you want plants that produce a lot of nectar for the whole season. You plant flowers for mass, and so many of the flowers in the gardens make their own mass like the lantana's and the butterfly bushes and porter weeds and pintas. All the verbenas are excellent and these are the kind of plants you need to keep your garden going so that you'll have a constant supply of nectar from springtime until fall when the butterflies start thinning out.</p>
	<p>>>Skinner: So tell me what we've got on the other side here Julie. >>Neel: We've got this beautiful Queen Anne's Lace. Not only is it wonderful for nectaring, but also it's the larval host plant for the black swallowtail. >>Skinner: You know, between having a field guide, and you know binoculars are not just for birding anymore are they. >>Neel: No, no... >>Skinner: This is a great way to sneak up on</p>

	<p>butterflies. >>Neel: Right, the binoculars are excellent.</p>
	<p>>>Narrator: According to the North American Butterfly Association there is no official name of a group of butterflies, though there are many suggestions. How does a baffle sound or a baleful, or a cloud, a cluster, a congress, or how about a shimmer, a shroud, or a shower. They all sound nice. If you have suggestions visit the website for the NABA.</p>
	<p>>>Neel: And I do have to hide my larval host plants as best I can because the birds know exactly where those caterpillars are if I plant them in mass. So, that's one thing. You plant at least 3 nectaring plants together and plant them close. Because butterflies don't want to use all their energy flying from one side of the garden to the other to find another good nectaring plant.</p>
	<p>>>Narrator: Planting on mass is a really good tip for butterfly gardening. Some other tips for creating your butterfly garden include putting out basking rocks for the butterflies to warm their wings. It's the way butterflies collect enough energy to flit around. Creating puddling spots will also attract butterflies as they are drawn to the minerals and moisture of a wet area. This is especially important in times of drought.</p>
	<p>>>Neel: I do have a wonderful little puddling area up close to the house. The butterflies pick this out. The best salt that I have found is urine, so consequently it gets sweetened on occasion by different members of the family. And Korean chrysanthemums that bloom, they are single blooms and it's very important to have single blooms and not double blooms in the garden, because a butterfly's tongue is not long enough to work its way down to where the nectar occurs, and one thing about plants that we have to remember – a lot of the nectar has been bred out of the double blooms. And here we've got pintas and daylilies. They do nectar on the daylilies. But this is bonariensis, which is a verbena that has been introduced, an excellent, excellent plant. >>Skinner: I mean look at all the butterflies. >>Neel: It produces a nectar. >>Skinner: That is really neat. You could just spend hours and hours out here watching these guys couldn't you</p>

	<p>>>Neel: Yes, yes... >>Skinner: Or do you? >>Neel: I do, and the best time is when I'm out here weeding or deadheading. They just do not pay any attention to you . You can just get right on them. >>Skinner: Well, this is really, really beautiful here. You have made quite an accomplishment with your garden here.</p>
	<p>>>Narrator: After witnessing the beauty of a butterfly garden perhaps you are interested in knowing how to plant your own butterfly garden. I know that I am! We've asked Walter Reeves of GPTV's own Gardening in Georgia to show us how.</p>
	<p>>>Reeves: Well that's right Michael. And here we have a garden where we have to think like a plant; not like a butterfly. You learned in Julie's garden about how the caterpillar thinks about things it's going to eat, how the butterfly looks for nectar plants in there too, but in this garden, we have think like a plant and make sure the plant roots are going to be happy when we plant our native plant butterfly garden. So what do you think the gaillardia is going to think when it sees all this clay soil? >>Skinner: I think it's going to say, "We need a little help here if I'm going to be happy living here." >>Reeves: I think you're exactly right. And the reason to help clay soil of course is to add is to add soil amendment to it. This is just organic matter that has been decomposed and screened, and we've got to add a lot of it to this soil in order to make our plants happy and to thrive here so we can have our butterflies. So why don't you grab a rake, I'll grab a shovel, and let's get to work preparing the soil for our plants. >>Skinner: Ok... Well I think that's got it. Doesn't it. >>Reeves: Well it's got my side anyway, and your side looks good too. >>Skinner: Looks pretty turned over. >>Reeves: Sure. >>Skinner: Now it's time for the amending process, the soil conditioner. >>Reeves: Right. The soil conditioner is really important because it does make the soil so loose, let's the roots of the plants grow through it. In different parts of the state this stuff can be made of a lot of different things. It could be—in South Georgia it could be—mmm, smells real good doesn't it? (laughs)—in</p>

South Georgia it could be pecan hulls or peanut shells or something like that. In North Georgia it could be pine tree chips that have been ground up and decomposed or wood fiber even that's been decomposed as well. And you know you can make your own compost. You can go behind your house and pile up your grass clippings and your limbs and things like that. Just let them rot. But for an area like this, probably the bagged stuff does a lot better; easier to handle; easier to spread and put it over the area.

>>Skinner: So with a bag this size, how do we put it in the soil here? How much?

>>Reeves: Well a bag this size is what? 2 cubic feet? So 2 cubic feet, if I do my math right, will cover about 8 square feet. So this is an area that's probably 32 square feet. I'm just guessing here, and I'd say 4 bags would probably be about right. So we take that, just spread it over the top and we mix that in.

>>Skinner: Ok...Well Walter, you grabbed the tiller. So this looks like a one-man job. I should probably just stand back here and watch and learn right?

>>Reeves: In the hands of an expert, it can really fly. Relax Michael...Michael, I really think you have a talent for tilling here. But after we get the soil amendment in the soil, of course we now have to place our plants. And native plants have a lot of different shapes and sizes. There are vines. There are knee-high perennials, and then there are some annuals too. So our next job is to get out here, rake it smooth, and we'll place our plants in our butterfly garden...Alright, a very nice design, Mr. Skinner. You know, in order to attract lots of different butterflies, you've got to have different sizes of plants, and boy have we got a size-variation here. Back in the back, Michael, I've chosen a scarlet hibiscus, and this is going to be huge. This is going to be as tall as you are, as wide as I am. It's going to be a big plant; big red flowers in the fall. And there's some vines. Here's some passion vine, and the pipe vine over there. That'll be very nice. This is porter weed right here. It's native to sort of the South Georgia area, not in North Georgia I don't think. And then on the other side, the hyssop, and both of them will be bellybutton size. And then the others will go down in order of size there. See this is actually a twofer right here because we have the milkweed on one side. That's what the caterpillars will eat. Different butterflies will be attracted by the flower, the gaillardia right here. The

adult butterflies will come and drink the nectar out of it. So we'll take these and we'll divide them up to where they should be, but I thought this was very interesting that you've got two of the different kinds of plants that you have to have with butterflies in the same place.

>>Skinner: And this is a food plant for one of my favorite butterflies.

>>Reeves: Which is?

>>Skinner: The monarch.

>>Reeves: The monarch butterfly. You bet; eats the milkweed very nicely. So to install these, I think we should walk around the edge here to stay on the sidewalk and the pine straw around it. And we'll put the plants in place with our shovels here, but we won't compact the soil too much with our shoes. Ok?

>>Skinner: Ok... When you get a garden in like this, Walter, is there any concern about the wrong insects or animals coming to your garden that you don't want?

>>Reeves: I guess there is, but honestly this is native plants and native plants should be able to fight against any bad insect that comes chewing on them. So probably I would never even think about putting insecticides on here; don't want to hurt the caterpillars and the butterflies of course. And let the native plants take care of themselves. That's what they are, native plants. They know how to adapt.

>>Skinner: Now with this one, I've got the twofer. What are we going to do here?

>>Reeves: Take it out of the pot first and let's see where the root systems go in there. Alright, so yeah, just use your fingers and see if you can divide them up pretty cleanly there. Yeah, perfect. Perfect, perfect. In fact, give me the milkweed. I'm going to put it over here. Because it's tall, I'm going to put it over on the other side.

>>Skinner: What have you got going on here Walter?

>>Reeves: Well look at this, Michael. This is interesting. The—what is this? The passion vine growing right here? Has grown out of the bottom of the pot a lot more than it grew out of the top. One little, tiny vine growing out of the top and...one, two, three, four coming out of the bottom of the pot. So what I'm going to do is I'm going to cut it open and try not to disturb those vines that are coming out of the pot on the bottom part here.

>>Skinner: Ok Walter, I've got all mine in.

>>Reeves: Ok I've got the last one right here going in.

Now, a quick quiz for you Michael.
>>Skinner: A quick quiz. Oh, good.
>>Reeves: What's this plant right here?
>>Skinner: Um...
>>Reeves: And what's this plant right here?
>>Skinner: Um...
>>Reeves: And that one right there? (both laugh) I know that we have all these plastic markers on them, but you know they're going to deteriorate in just a couple of months in the sunshine, so look in that little paper bag beside your knee there and look what I made for you, a special present for Georgia Outdoors.
>>Skinner: Oh, cool!
>>Reeves: So you just take a saucer basically and see how you put the name on them, Bee Balm? I think I can remember which is which. The bee balm is over here and the butterfly weed is right here. But let's put these down at the base of each plant. And that way we'll know what they are, and I think the lettering will stay on there a lot longer than those plastic markers would.
>>Skinner: Ok Walter, I've got all the identification saucers down.
>>Reeves: Ok, so you know what the plants are.
>>Skinner: Why are you planting sticks? How are they going to attract butterflies?
>>Reeves: Well they're not going to attract butterflies, but these are, as you know, native plants. And this is a non-native exotic stick, which I pruned away. It's Chinese privet; nasty old privet; grows along highways and in riverbanks and things like that. So I cut some pieces about 6 feet long and we're going to make us a little trellis around the pipe vine here, the passion vine as it is. And we're going to tie it together at the top. If you'll hold that right there you'll see how quick it is. You just take some twine, some juke twine, wrap it up 2 or 3 times up here, and tie it in a knot and we have a quick and easy trellis. And again, this is a non-native exotic, but it still can be used to attract butterflies to the garden. The big deal though is we've got to train the vine to go up the trellis right here, so that is going to take a couple minutes. Well we've got to do a couple more things as far as maintenance goes. Number one, we want to make this a good water-saving garden, so for that we put some pine straw over the soil here to keep the moisture in the soil. But butterflies like things messy, so it's ok to have a couple of weeds in here.

	<p>Don't be obsessive about a butterfly garden. They'll do fine without it. What about pesticides though? Would you put pesticides on a butterfly garden?</p> <p>>>Skinner: I tend to stay away from pesticides.</p> <p>>>Reeves: I agree. And besides that, you're going to be killing the larvae and the butterflies themselves, so I don't think we need any pesticides on here because basically they're native plants aren't they? And so they can take care of themselves, so I don't see any reason why we'd ever put pesticides on a butterfly garden. So you do the pine straw over there and I'll do the pine straw over here...and it's pretty, pretty, pretty.</p> <p>>>Skinner: And Walter, I thought we'd finish the garden off with a hummingbird feeder because butterfly gardens will also attract hummingbirds, right?</p> <p>>>Reeves: So the hummingbirds will enjoy the garden right here as well as the butterflies. And I brought a butterfly decoy, just like those duck and goose decoys that the wildlife guys use, so the butterflies will know that they are welcome in this native plant butterfly garden.</p> <p>>>Skinner: Walter, thanks so much for your expertise and knowledge.</p> <p>>>Reeves: It's been my pleasure Michael.</p> <p>>>Skinner: It's been great working with you.</p> <p>>>Reeves: You bet.</p> <p>>>Skinner: We'll see you next time on Georgia Outdoors.</p>
	Georgia Outdoors Theme Music